



FLEXmax™

Continuous Maximum Power Point Tracking Charge Controllers

- Increases PV Array Output by up to 30%
- Advanced Continuous Maximum Power Point Tracking
- Full Power Output in Ambient Temperatures up to 104°F (40°C)
- Battery Voltages from 12 VDC to 60 VDC
- Fully OutBack Network Integrated and Programmable
- Programmable Auxiliary Control Output
- Built-in 128 days of Data Logging
- Standard 5 Year Warranty



The FLEXmax family of charge controllers is the latest innovation in Maximum Power Point Tracking (MPPT) charge controllers from OutBack Power Systems. The innovative FLEXmax MPPT software algorithm is both continuous and active, increasing your photovoltaic array power yield up to 30% compared to non-MPPT controllers. Thanks to active cooling and intelligent thermal management cooling, both FLEXmax charge controllers can operate at their full maximum current rating, 60 Amps or 80 Amps respectively, in ambient temperatures as high as 104°F (40°C).

Included in all of the FLEXmax Charge Controllers are the revolutionary features first developed by OutBack Power, including

support for a wide range of nominal battery voltages and the ability to step-down a higher voltage solar array to recharge a lower voltage battery bank. A built-in, backlit 80 character display shows the current status and logged system performance data for the last 128 days at the touch of a button. The integrated OutBack network communications allows FLEXmax series Charge Controllers to be remotely programmed and monitored via a MATE system display and provides unrivaled complete system integration.

FLEXmax MPPT Charge Controllers are the only choice when you demand a high performance, efficient and versatile charge controller for your advanced power system.



www.outbackpower.com

FLEXmax Specifications

FLEXmax[®] 80 - FM80-150VDC

FLEXmax[®] 60 - FM60-150VDC

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|---|--|--|
| Nominal Battery Voltages | 12, 24, 36, 48, or 60 VDC (Single model - selectable via field programming at start-up) | 12, 24, 36, 48, or 60 VDC (Single model - selectable via field programming at start-up) |
| Maximum Output Current | 80 amps @ 104° F (40°C) with adjustable current limit | 60 amps @ 104° F (40°C) with adjustable current limit |
| Maximum Solar Array STC Nameplate | 12 VDC systems 1250 Watts / 24 VDC systems 2500 Watts / 48 VDC systems 5000 Watts / 60 VDC Systems 7500 Watts | 12 VDC systems 900 Watts / 24 VDC systems 1800 Watts / 48 VDC systems 3600 Watts / 60 VDC Systems 4500 Watts |
| NEC Recommended Solar Array STC Nameplate | 12 VDC systems 1000 Watts / 24 VDC systems 2000 Watts / 48 VDC systems 4000 Watts / 60 VDC Systems 5000 Watts | 12 VDC systems 750 Watts / 24 VDC systems 1500 Watts / 48 VDC systems 3000 Watts / 60 VDC Systems 3750 Watts |
| PV Open Circuit Voltage (VOC) | 150 VDC absolute maximum coldest conditions / 145 VDC start-up and operating maximum | 150 VDC absolute maximum coldest conditions / 145 VDC start-up and operating maximum |
| Standby Power Consumption | Less than 1 Watt typical | Less than 1 Watt typical |
| Power Conversion Efficiency | 97.5% @ 80 Amps in a 48 VDC System - Typical | 98.1% @ 60 Amps in a 48 VDC System voltage - Typical |
| Charging Regulation | Five Stages: Bulk, Absorption, Float, Silent and Equalization | Five Stages: Bulk, Absorption, Float, Silent and Equalization |
| Voltage Regulation Set points | 10 to 60 VDC user adjustable with password protection | 10 to 60 VDC user adjustable with password protection |
| Equalization Charging | Programmable Voltage Setpoint and Duration - Automatic Termination when completed | Programmable Voltage Setpoint and Duration - Automatic Termination when completed |
| Battery Temperature Compensation | Automatic with optional RTS installed / 5.0 mV per °C per 2V battery cell | Automatic with optional RTS installed / 5.0 mV per °C per 2V battery cell |
| Voltage Step-Down Capability | Can charge a lower voltage battery from a higher voltage PV array - Max 150 VDC input | Can charge a lower voltage battery from a higher voltage PV array - Max 150 VDC input |
| Programmable Auxiliary Control Output | 12 VDC output signal which can be programmed for different control applications (Maximum of 0.2 amps DC) | 12 VDC output signal which can be programmed for different control applications (Maximum of 0.2 amps DC) |
| Status Display | 3.1" (8 cm) backlit LCD screen - 4 lines with 80 alphanumeric characters total | 3.1" (8 cm) backlit LCD screen - 4 lines with 80 alphanumeric characters total |
| Remote Display and Controller | Optional Mate or Mate2 with RS232 Serial Communications Port | Optional Mate or Mate2 with RS232 Serial Communications Port |
| Network Cabeling | Proprietary network system using RJ 45 Modular Connectors with CAT 5e Cable (8 wires) | Proprietary network system using RJ 45 Modular Connectors with CAT 5e Cable (8 wires) |
| Data Logging | Last 128 days of Operation - Amp Hours, Watt Hours, Time in Float, Peak Watts, Amps, Solar Array Voltage, Max Battery Voltage Min Battery Voltage and Absorb for each day along with total Accumulated Amp Hours, and kW Hours of production | Last 128 days of Operation - Amp Hours, Watt Hours, Time in Float, Peak Watts, Amps, Solar Array Voltage, Max Battery Voltage Min Battery Voltage and Absorb for each day along with total Accumulated Amp Hours, and kW Hours of production |
| Hydro Turbine Applications | Consult factory for approved Turbines | Consult factory for approved Turbines |
| Positive Ground Applications | Requires two Pole Breakers for switching both positive and Negative Conductors on both Solar Array and Battery Connections (HUB 4 and HUB 10 can not be used for use in positive ground applications) | Requires two Pole Breakers for switching both positive and Negative Conductors on both Solar Array and Battery Connections (HUB 4 and HUB 10 can not be used for use in positive ground applications) |
| Operating Temperature Range | Minimum -40° to maximum 60° C (Power capacity of the controller is automatically derated when operated above 40° C) | Minimum -40° to maximum 60° C (Power capacity of the controller is automatically derated when operated above 40° C) |
| Environmental Rating | Indoor Type 1 | Indoor Type 1 |
| Conduit Knockouts | One 1" (35mm) on the back; One 1" (35mm) on the left side; Two 1" (35mm) on the bottom | One 1" (35mm) on the back; One 1" (35mm) on the left side; Two 1" (35mm) on the bottom |
| Warranty | Standard 5 year / Available 10 Year | Standard 5 year / Available 10 Year |
| Weight | - Unit 12.20 lbs (5.56 kg) - Shipping 15.75 lbs (7.10 kg) | 11.65 lbs (5.3 kg) 14.55 lbs (6.4 kg) |
| Dimensions | - Unit 16.25" x 5.75" x 4" (41.3 x 14 x 10 cm) - (H x W x D) - Shipping 21" x 10.5" x 9.75" (53 x 27 x 25 cm) | 13.5 x 5.75 x 4" (40 x 14 x 10 cm) 18 x 11 x 8" (46 x 30 x 20 cm) |
| Options | Remote Temperature Sensor (RTS), HUB 4, HUB 10, MATE, MATE 2 | Remote Temperature Sensor (RTS), HUB 4, HUB 10, MATE, MATE 2 |
| Menu Languages | English & Spanish | English & Spanish |
| Certifications | ETL Listed to UL1741, CSA C22.2 No. 107.1 | ETL Listed to UL1741, CSA C22.2 No. 107.1 |

*Specifications subject to change without notice



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